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ABSTRACT

This paper examines the experience of some of the teachers participating in the Multimedia Portables for Teachers Pilot, one of 25 projects composed the United Kingdom Education Department's Superhighways Initiative. The Pilot put 1,138 high-specification portable computers in the hands of practicing teachers in a range of schools. The teachers interviewed in the course of undertaking case studies as part of the formal evaluation of the Pilot generally exhibited very high levels of motivation and self-reliance. The paper re-examines these case studies in the light of specific ideas of teacher professionalism and of the transition to postmodernity. It is concluded that the Pilot has been successful in providing a context for teacher professionalism to flourish and that the Pilot was somewhat postmodern in nature--flexible, adaptable, sensitive to context, and non-prescriptive. (Contains 20 references.) (Author/AEF)

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A New Professionalism? Teacher Use of Multimedia Portable Computers with Internet Capability

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Abstract

This paper examines the experience of some of the teachers participating in the Multimedia Portables for Teachers Pilot. The Pilot was a major, highly successful project which put 1138 high-specification portable computers in the hands of practising teachers in a range of schools. As a member of the evaluation team, I was interested in the generally very high levels of motivation and self-reliance exhibited by teachers whom I interviewed in the course of undertaking case studies as part of the formal evaluation of the Pilot. The paper re-examines these case studies in the light of specific ideas of teacher professionalism and of the transition to postmodernity.

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Introduction

There has been a sequence of initiatives to increase the use of computers in Britain's schools for over 25 years. In this paper I examine one particular phase of this extension of computers into the work of teachers and schools - the recent Multimedia Portables for Teachers Pilot. I will do so in the light of changing discourses of teacher professionalism, themselves set within the context of the transition to postmodernity.

I have taken the UK as the setting for these reflections. However, I am confident that, as predicted by Ennals et al. (1986), "whatever changes do come about in our schools as a result of the take-up of new technologies, the issues which are being opened up extend right across national frontiers; they are truly world-wide." The issues which I will bring to the foreground here are those relating to teacher professionalism and agency.

Modernist schools, postmodern society

The rise and proliferation of the computer is inextricably interwoven with the transition from the modern era to that of postmodernity. In particular, the development of increased computer memory and faster processing, together with the extension of the Internet, has been closely associated with the compression of time and space, a key characteristic of postmodern social, economic and cultural conditions.

Schools, it has been argued, are essentially modernist institutions (Hargreaves 1994), left as structural and procedural anachronisms whilst the world around them becomes increasingly postmodern in how it operates. Computers have made possible fundamental changes in how that world operates, but they have not (yet?) had the same impact on schools. Many aspects of the way schools are structured (subject departments, timetables, classrooms) mirror the characteristics of Fordist-type mass production, sometimes in the form of a malign, anti-professional 'neo-Fordism' (Hodgkinson 1997). Yet much of the economic activity of advanced economies has changed with the impact of new technologies. Though championed by some and accepted as inevitable by others, such change has not been without conflict, criticism and unwelcome, socially disruptive consequences. Can schools, indeed *should* schools, undergo the same transformation?

But schools do not suffer only from being 'out of synch' with such large-scale changes. Many modern societies are themselves in difficulty, economically and socially. And in such societies and their increasingly hard-to-afford systems of public education, schools are charged with the responsibility to "administer the innovative treatment if the ailing society is to recover."(Winer et al. 1987) Part of that 'innovative treatment' is to produce a flexible, highly qualified, technologically literate work force. "The aim of many policy-makers in the UK and around the world is to encourage evolution into a learning society for the next century: one in which all people

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are responsible for their own learning throughout their lives. Access to information and learning will often depend on new technologies as well as on an approach to teaching which supports collaborative professional development. Governments in Europe and around the world have already recognised the need to review educational practices and incorporate new technologies. Their view is of a vocational imperative and one in which IT will increase the quality and efficiency of learning itself." (Somekh, B, and Davis, N, 1997)

Yet many of the schools charged with this responsibility have been slow to innovate when compared to the rate of technological change in business and industry. This is partly due to the inherent conservatism of the school as an institution, and also due to what has been termed 'innovation fatigue'. Educational policies and initiatives come thick and fast and, "... as the pressures of postmodernity are felt, the teacher's role expands to take on new problems and mandates - though little of the old role is cast aside to make room for the new changes. [Further,] innovations multiply as change accelerates, creating senses of overload among teachers and principals or headteachers responsible for implementing them. More and more changes are imposed and the timelines for their implementation are truncated." (Hargreaves 1994)

Computers into schools

The introduction and extension of the use of computers into teachers' work is one such innovation. Though without doubt change has taken place, the impact between and within schools has been uneven (see, for instance, Goldstein, G 1997). Watson (1997) has argued that one reason for this unevenness has been a "dichotomy of purpose", between a pedagogic, subject-focused rationale for the introduction and use of computers on the one hand, and a more vocational, technocentric rationale on the other. This has resulted in confusing messages to teachers, about the purpose of the adoption of computers in their work.

Since the early 1970's a sequence of initiatives can be identified (see Watson, 1997), linked by their underlying aim of increasing the use made of computers. Throughout this time, teachers have been exhorted to become computer-literate and to use IT in their work. However, at no stage has there been any financial incentive (eg tax breaks) for teachers to become computer owners (though some have, of course, bought computers for either or both family use and work-related use). So, in the absence of a personally-owned computer at home, many teachers have had their computer use restricted to what has been possible in school, with the additional possibility of taking a cumbersome desktop computer home for an evening, weekend or holiday.

The Multimedia Portables for Teachers Pilot (MPTP) 1996-7

The Multimedia Portables for Teachers Pilot, funded by the Government and managed by the then National Council for Educational Technology (NCET), can be seen in the context described above. The Pilot was one of 25 projects comprising the UK Education Departments' Superhighways Initiative, itself part of the preparation for the development of the UK's National Grid for Learning.

The aims of MPTP were "to:

- provide a varied group of teachers with personal computers that support multimedia and/or communications;
- increase teacher confidence and competence in the use of ICT resources;
- promote better learning in the pupils taught by the teachers taking part in the pilot." (DfEE et al, 1997, p.99)

In the summer of 1996 NCET issued 1138 high specification portable computers to pairs of teachers in 569 schools. The computers had full Internet capability, and access accounts with two Internet Service Providers were included. All but 8% of the portables had a CD ROM drive. All computers were issued with personal productivity software, together with a 'bundle' of educational CD ROMs. The teachers had successfully bid for inclusion in the Pilot, with the support of their headteachers. Headteachers' practical support was to be in the form of guaranteed in-school access to a telephone point for Internet access, together with the release of the teachers to attend an initial three-hour demonstration and training session. The teachers had given a brief outline of their proposed use of the computer and had agreed to record their use of the computer and to co-operate with the evaluation of the Pilot. Some of the teachers were starting from a very low base in terms of confidence and

competence in the use of IT, having had little or no prior experience of using IT either personally or in the classroom.

Teachers attended a three-hour start-up session during which the computer was set up, introductory training in its use was given and Internet access was demonstrated. In most cases this took place before the summer holidays, the intention being that the teachers could then take the computers home to further familiarise themselves during the holidays.

Beyond what I have already mentioned, few requirements or constraints were placed on teachers' use of 'their' computers. They could, quite literally, use them when, where and for whatever purpose they wished. There was no requirement to attend further training. The computers remained the property of MPTP, but were entrusted fully to the individual teachers who joined the project. At the end of the project, the computers would pass into the safe keeping of the schools involved, provided that they had been successfully used during the Pilot. The evaluation of the Pilot (Harrison et al. 1998) provided a detailed insight into the teachers' use of the computers and into the factors which were influential on this.

The Pilot was clearly successful in terms of its original aims, (so much so that the government has put in a further £23 million to provide portables for a further 10,000 teachers). Many teachers made significant progress with both their personal ICT capability and confidence during the life of the project, and their classroom use of new technology had increased correspondingly. This was consistent with the findings and recommendations of the Stevenson Report (Independent ICT in Schools Commission, 1997), that "ways should be found of making computers available to teachers to facilitate the learning process. Teachers rapidly become enthusiastic once they have regular hands-on access to computers. It could also potentially reduce some of the costly training hours required." (Section III, 4) "Where teachers have access to a computer of their own, they rapidly become competent and above all confident at using it. Any time spent at home with a computer is invaluable in staff development terms." (Section V, 4)

However, there is a danger in such cases to indulge in 'technological determinism'(see, for instance, Mackay, 1991), and to conclude that what happened, did so because of the computers. But this would give insufficient weight to the fact of human agency on the part of the teachers involved. One of the strongest predictors of success in the Pilot was teachers' attitude (Harrison et al. 1998, p29). I want to argue that this is indicative of the nature of their underlying professionalism. In order to understand fully the impact of the Pilot on the lives of the teachers involved, we should interpret their actions and use of the computers against a clearly articulated view of 'teacher professionalism'.

Forms of professionalism

Though the term 'professionalism' is often used, exactly what it means is neither universally agreed nor understood. At one level it may be taken as "something which defines and articulates the quality and character of people's actions" within an occupational group (Hargreaves and Goodson, 1996). In the opening section of this paper I briefly outlined some of the tensions between schools as modernist institutions, and their broader, postmodern settings in contemporary society. What does teacher professionalism look like in such a context?

Professionalism, in Sockett's view, is an amalgam of character, commitment, subject knowledge and pedagogical knowledge, but is not restricted to these essentially classroom-orientated attributes. There is also professionalism beyond the classroom, having to do with an orientation towards school and, beyond that, to public perceptions of, and debates about, education. "This wide role…is particularly important for a democratic society, for the teacher is a main purveyor of democratic civilisation." (Sockett 1993, p.8)

Of course, teacher professionalism is not an absolute. Ideas of teacher professionalism are socially constructed and complex. As Lawn (1996) says, "Teacher professionalism is not a fixed idea, it is situational and relational, it has contradictory aspects (progressive and conservative) and it is not homogeneous." (p120) Teacher professionalism, therefore, is also dynamic, and with the arrival of the market and the central specification of competences (including IT capability) a process occurs whereby the postmodern teacher begins to be

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constructed. With more focus on outputs rather than inputs, competences become more important than 'education' and a different notion of professionalism begins to emerge.

Hargreaves and Goodson (1996 pp4-19) identify five forms of professionalism which correspond to different discourses around the contested notion of 'teacher professionalism'. The five forms are:

- classical professionalism,

(the longest-running discourse, rooted in an essentially modernist view), and four others:

- flexible professionalism;
- practical professionalism;
- extended professionalism;
- complex professionalism;

all of which "are emerging in the postmodern age" (*Ibid*, p.9).

Each of these, as indicated in the quotation from Lawn (above), is neither 'A Good Thing' nor 'A Bad Thing'. Rather, they are all inherently problematic, shot through with unrealised possibilities, hidden constraints and lurking dangers. As a recognition of these difficulties, Hargreaves and Goodson (1996) propose a model of "postmodern professionalism", based on seven principles which they identify as follows (condensed but with emphasis as in the original):

- opportunities and responsibility to exercise *discretionary judgement*;
- opportunities and expectations to engage with *moral and social purposes*;
- commitment to working collegially within *collaborative cultures*;
- occupational *heteronomy* rather than self-protective *autonomy*;
- a commitment to active *care* and not just anodyne *service* for students;
- a self-directed search and struggle for *continuous learning*;
- the creation and recognition of high task *complexity*.

These principles imply high levels of individual agency, that is, the power of the individual to do things and to effect change.

Postmodern professionalism? MPTP re-appraised

In this section I will examine the experiences of some of the teacher participants in the Pilot, in the light of the foregoing discussion of forms of professionalism, drawing on my own experiences as a member of the evaluation team.

Ingrid and Phil (fictitious names) teach at an inner-city primary school. I visited them on two occasions during the Pilot. Both were using their computers in a range of ways personally and professionally, and had been quick to integrate the computers into their teaching. Both showed a great deal of commitment to maximising their understanding of what the computer could do for them and put in a lot of their own time on this. Both had dealt with difficulties and overcome obstacles in the course of integrating the computers into their work, and both spoke animatedly when interviewed about their participation in the project.

Ingrid emphasised that she had a particularly strong commitment to developing positive attitudes to computers among girls. She had made virtually no personal use of computers before the Pilot, yet with the portable computer she quickly became an avid user of the Internet which she came to view as a "tremendous self-helping organisation". She identified "a time factor, but it's ever such fun!" and used the Internet at home to learn more in the evenings and at weekends (and doubled her 'phone bill). Ingrid quickly saw the possibilities of the computer for supporting collaborative research. She set up links via the Internet with teachers in Kentucky and Louisiana, and later, in Scandinavia. Though practically a neophyte on joining the Pilot, she soon went on to learn about file compression and zip drives, began downloading programs from the Internet and wrote her own homepage. She talked knowledgeably and confidently about all of these, using appropriate specialist terminology. She now held all her teaching plans on the computer. Her computer club used the portable to link with a school near Washington, USA, to whom they sent writing and pictures by e-mail. Ingrid herself felt ready to work more widely with other teachers in a support capacity. She also spoke enthusiastically about the

possibilities of telematics supporting the work of auditors (of whom she was one) in ensuring consistency under the national testing arrangements.

Phil started from a significantly higher base than Ingrid in terms of personal IT capability, but also made considerable progress. He was without his computer for several months due to a fault, but showed both patience and persistence in dealing with the problem, despite poor 'after-care' from the supplier. He learned to use spreadsheets to track reading scores and other assessment data by way of overlay graphs. He also used spreadsheets in his administrative role as Deputy Headteacher, to draw up rotas and timetables. Phil said, "As a professional tool, it's been brilliant." Phil foresaw the possibility of losing the computer from his personal use at the end of the Pilot. Even though he had bought a desk-top computer for home use four years previously, he felt that he would have to replace the portable at his own expense if it were taken from him. In his teaching he went to some trouble to take groups of children to the room in another building where the 'phone point for Internet access was located. This was so that they could use the portable computer to investigate a website as an additional information source in connection with a history topic, and also to use e-mail to communicate with a teacher from the school who had gone to the USA. He used the computer's multimedia capabilities to play 'music of the week' audio CDs in his classroom. Phil is actively interested in a proposed project for the school to develop a computer room which would be available for adult and community use in the evenings.

I have described these two cases at some length to give an idea of the extent of what these teachers did. These were not exceptional teachers in terms of the Pilot; rather they provide vivid examples of what can be achieved when teachers are given access to good resources and trusted to get on with the job. Others whom I visited did different things, but in most cases the levels of commitment and activity were comparable to Ingrid and Phil. Gillian and Julie (in different schools) both made a point of sharing the computer with colleagues. Gillian wished to provide colleagues in other subject areas with the opportunity to evaluate CD ROMs, whilst Julie provided her colleagues with the opportunity to word-process reports to parents (as per school policy) at home, rather than having to arrange to stay late at school. For Tom and Elaine (in different schools) a priority was to maximise student access to their computers, so they made them available during their lunch breaks, and Rose's computer proved so popular that she had to organise a booking system for students wishing to word process their examination coursework. Several of the teachers I interviewed made light of what they had achieved and were apologetic for not having done more, yet in all cases participation in the Pilot was in addition to their current work, with little or no release from other responsibilities.

As noted above, there is a danger in reporting the successes of a project such as MPTP for unstated assumptions of a 'technologically deterministic' nature to be made, and to imply, unintentionally or otherwise, that agency lies with the technology. Clearly the provision of portable computers made a difference, but the teachers themselves made the changes. Computers do not of themselves cause teachers to be professional. Computers do not of themselves cause teachers to use them, (and indeed a small minority made only minimal use of the computer provided).

The Pilot provided a context in which teacher professionalism could be clearly demonstrated, and we can identify several aspects of Hargreaves and Goodson's 'postmodern professionalism' in the above descriptions. Such professionalism has, of course, a cost. For most of the teachers I interviewed, the main cost was their time. In effect, the teachers were putting in many additional hours of their own time on their professional development, at a time when teachers' trade unions are pressing for reductions in teachers' workload. Several of the teachers expressed a wish for greater access to structured in-service training in connection with the computers. This is consistent with the finding of Watson (1993).

However, it was also apparent that the teachers were actively engaged in blurring certain distinctions. In many cases the *work/leisure distinction* was blurred, for instance in the case of Ian who learned about the Internet at home, by pursuing his interest in sport. Teachers have always taken work home, and the portability of the computers made possible a further blurring of the *spatial distinction between home and school*. For instance Tim and Martin in an already technology-rich school, were now able to spend extended periods of time properly evaluating CD ROMs at home. We see in these instances some of the consequences for teachers' work, consistent with the compression of time and space which is one of the characteristics of the 'condition of postmodernity' noted earlier. A further blurring of distinctions occurred around the *personal/professional distinction*, for instance in the case of Elaine who bought CD ROMs for family use on the computer.

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Conclusions

At the time of writing the UK awaits the onset of its largest-ever education staff development initiative, the £230 million lottery-funded ICT training program intended to reach all the country's teachers between 1999 and 2002.

The Multimedia Portables for Teachers Pilot can be seen to have been successful in providing a context for teacher professionalism to flourish. This professionalism shows many of the characteristics of 'postmodern professionalism'. The Pilot itself could be said to have been somewhat postmodern in nature – flexible, adaptable, sensitive to context and non-prescriptive. It provided the conditions in which teachers could reflectively generate knowledge about the use of computers in their own particular settings. Like Elliot's action-research-based "innovatory progressive culture" in teaching, it would be resistant to "bureaucratic standardisation" (Elliott, 1989).

On the other hand, the awaited program of lottery-funded training for all UK teachers is based on the new Initial Teacher Training National Curriculum for the use of ICT in subject teaching (DfEE, 1998). This curriculum is prescriptive and very detailed. It is a specification to be applied equally in all subject areas, a sort of grand narrative for educational ICT. Essentially modernist in character, it relies on 'bureaucratic standardisation' and looks less likely to appeal to a wider sense of professionalism. It is also technologically determinist in nature. Computers, and training in how to use them, do not make things happen in the classroom – teachers do. Perhaps more of what is known about teacher professionalism, and about how teachers come to use technological aids, including computers, in their work, could have had a greater influence on what Vanessa Potter, Director of Policy and External Relations for the New Opportunities Fund, calls this "one-off catch-up" initiative.

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